



Town of Pepperell Department of Public Works

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Mr. William Reyelt
Dept Housing & Community Development
100 Cambridge St, Suite 300
Boston, MA 02114

RE: Pepperell Smart Growth Overlay District / 40R Zoning

Dear Mr. William Reyelt

The Pepperell Department of Public Works has reviewed the revised 40R Zoning proposal which now limits development to two specific locations – Leighton Street off of Lowell Road, and the Senior Center on Nashua Road. Both locations are within the areas of Town where water and sewer utilities are available. No specific details were provided regarding the configuration of the “units” that will comprise these developments, therefore, assumed a buildout of 307 units with a mix of 1 to 4 BR’s per unit. Additionally, no schedule was provided with either proposal, so we assumed a worst-case scenario of all 307 units being constructed in the next 2-5 years.

Both proposed sites are located on or directly adjacent to, arterial roads that are also former numbered state routes, so we do not anticipate any significant burden being imposed on the current transportation system. Access to each project will need to be assessed to ensure improvements are made to ensure more localized impacts are mitigated.

The Leighton Street site currently has basic pedestrian accommodations with connections serving the downtown area. Extending pedestrian access to the Senior Center is achievable with moderate to significant improvements.

As noted, both proposed locations are served by municipal wastewater, and we are not aware of any current significant bottlenecks in the system that would limit the ability of either project to use the existing sewage collection system; however, each project would need to be specifically evaluated at the time of submission to ensure that the proposed volume and location of discharge can be accommodated. The Pepperell wastewater treatment plant has more than sufficient capacity to accommodate the full buildout of both proposed developments.

With regards to potable water, the Town of Pepperell is currently permitted by MADEP to produce a maximum of 1.786 million gallons per day (MGD) with all five potable sources in service. One of these sources (Nashua Road Well) has been removed from the system as pollutants (PFAS) in the source water make it non-potable under MASDEP drinking water standards, and this lowers our current, *effective* daily permitted capacity to 1.066 MGD. Pepperell's existing average daily demand off-peak (winter) averages 0.5 to 0.6 MGD. Typical daily peak seasonal (summer) demand ranges from 0.8 to 0.9 MGD has approached 1.2 MGD on occasion.

Based on the assumptions previously stated, and assuming an average daily water consumption of 75gpd/BR we anticipate that the proposed projects would create an additional off-peak demand of approximately 60,000 gallons per day (gpd) or 0.06s MGD on the system. During the off-peak demand levels, the water system is capable of supporting both proposed developments. In the event of a short-term shutdown of either of the operational, potable water sources for repair, maintenance, etc..., the proposed off-peak demand could be met with only one water source in service without placing an undue burden on the distribution and treatment systems.

As noted, Pepperell's peak demand (summer) currently averages 0.8 to 0.9 MGD and can approach 1.2 MGD. Drought conditions can impact the ability of the infrastructure to produce at this level long-term under peak demand, and water use restrictions are likely to be required during a sustained drought. While summer peaking should theoretically be lower with denser development, a 1.5 factor was assumed to develop a seasonal peak of 90,000 gpd for the two proposed sites; therefore, the buildout of both proposed sites would essentially consume just over half (54%) of all *currently* remaining permitted production capacity in the system, i.e., available permitted capacity with Nashua Road well remaining offline. It should be noted that the temporary loss of either remaining production wellsite (Bemis Well or Jersey Street

Well) under the buildout scenario would require immediate and potentially severe restrictions being imposed on town-wide water usage to avoid catastrophic impacts to the customers, including fire protection.

Considering the future on a water quality aspect, which is not a current consideration for the analysis provided above, it is very likely that MADEP will adopt far more stringent PFAS/PFOS standards (PFAS 29) in the near future. It is possible that the Jersey Street Well may be impacted by these regulatory burdens and treatment may be necessary. One solution would be the construction of a treatment plant, located such that it could not only treat the Jersey Street Well, but also the PFAS and Fe/Mn issues at the Nashua Road Well, thus restoring Pepperell's entire permitted water production capacity. This would restore a significant amount of potable water (0.72 MGD) but it would also entail a significant effort for the design and construction of a large treatment plant, and the creation of a dedicated raw water transmission line from Nashua Road Well to such a treatment plant. We estimate the current cost for these upgrades to be \$30-40M range.

In closing, it appears that the 40R projects will not place an undue burden on Pepperell's transportation and wastewater infrastructure. It also appears that they can be supported with municipal water, albeit with significant upgrades and accommodations being required to safeguard the towns water supply for domestic and fire protection purposes. Please note that not all of the water system upgrades are directly and solely attributable to the proposed 40R projects, and that some level of water system upgrades are likely to be required under any scenario moving forward. With PFAS remediation being a moving target, it is difficult to estimate the level of effort / burden directly created by, and attributable to, the adoption of the 40R zoning.

Please do not hesitate to contact me if you require clarification or further information.

Regards,

Kenneth Kalinowski, PE
Town Engineer
Director of Public Works

cc: Jennifer Gingras, Town Planner
Andrew MacLean, Town Administrator
Tom Nephew, Chair, Board of Public Works
Paul Brinkman, DPW Business Manager